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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,118	02/10/2006	Moustapha Hafez	034299-651	8883

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EXAMINER
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CARLOS, ALVIN LEABRES

ART UNIT	PAPER NUMBER
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3714

MAIL DATE	DELIVERY MODE
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08/14/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/540,118	<b>Applicant(s)</b> HAFEZ ET AL.	
	<b>Examiner</b> ALVIN L. CARLOS	<b>Art Unit</b> 3714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>02/16/2006</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Prince 6743021.

Re claim 1, Prince teaches a device comprising a tactile interface formed by a plate having a surface capable of being modified in a controlled manner (see figure 1, column 1 lines 24-26), plate comprising an array of elements for modification of the surface (see figure 2, column 3 lines 54-60), control means of the modification elements of the surface (see figure 4, column 8 lines 1-27), characterized in that the plate is made of a shape memory material A or comprising at least one sub-plate made of shape memory material A (see figures 9A-9B, column 11 lines 14-18), and in that the array of modification elements of the surface of the plate is constituted by an array of one or more blades solid monolithically with the plate (see figures 2 and 6), by one or more arms solid monolithically with the plate (see figure 6 and 11C), recesses for releasing blades being present on a part of a perimeter of the blade (see figure 6, column 9 lines

37-59), the blade having a first position at a first temperature and a second position at a second temperature (see figures 9-10, column 11 lines 44-59).

Re claim 2, Prince teaches a tactile interface formed by a plate made of a shape memory material characterized in that the shape memory material making up the plate is a two-way material having a first hot form and a second cold form (see figures 9-10, column 11 lines 44-59).

Re claim 3, Prince teaches a device comprising a tactile interface formed by a plate made of a shape memory material characterized in that modification elements of the surface of the plate incorporate elastic elements mechanically connected on the one hand to the plate and on the other hand to the modification element of the surface of the plate to which these elastic elements belong (see figures 9-10, column 6 lines 45-52), exerting a return force on the modification element of the surface of the plate (10) to bring it back from the second to the first form (see figures 9-10, column 11 lines 66-67 and column 12 lines 1-42).

Re claim 4, Prince teaches a device comprising a tactile interface formed by a plate made of a shape memory material characterized in that modification elements of the surface of the plate incorporate elastic elements mechanically connected on the one hand to the plate and on the other hand to the modification element of the surface of the plate to which these elastic elements belong (see figures 9-10, column 6 lines 45-52), exerting a return force on the modification element of the surface of the plate to bring it back from the second to the first form (see figures 9-10, column 11 lines 66-67 and column 12 lines 1-42).

Re claim 5, Prince teaches a tactile interface formed by a plate made of a shape memory material characterized in that it is formed from two sub-plates solid with one another by a main common surface (see figures 10A-10B, column 11 lines 39-52).

Re claim 6, Prince teaches a device comprising a tactile interface formed by a plate made of a shape memory material characterized in that one of the sub-plates is made of a shape memory material (see figures 9A-9B, column 11 lines 14-21).

Re claim 7, Prince teaches a device comprising a tactile interface formed by a plate made of a shape memory material characterized in that the two sub-plates are made of a shape memory material (see figures 8A-8B, column 10 lines 56-61).

Re claim 8, Prince teaches a tactile interface formed by a plate made of a shape memory material characterized in that a sub-part of a modification element of the surface of the plate formed in one of the sub-plates has a recessed part present above a part of a full sub-part of the other sub-plate (see figure 6, column 9 lines 50-59).

Re claim 9, Prince teaches a tactile interface formed by a plate made of a shape memory material characterized in that a layer made of thermally insulating material is interposed between the two sub-plates made of shape memory material (see figures 6 and 8, column 6 lines 45-48 and column 9 lines 50-59).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 10-12, 14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prince 6743021.

Re claim 10, Prince teaches a tactile interface characterized in that the control means of the transformation of the modification elements of the tactile sensation comprising one or more laser emitters (column 12 lines 14-16), whereof the radiation from each is utilized to create the transformation of one or more modification elements of the tactile sensation, the radiation emitted by a laser emitter acting by heating arms, the deformation of arms causing a blade to pass from the first to the second position (column 12 lines 17-35). Furthermore, since Prince teaches the thin film shape memory material heated by joule heating, it would have been obvious to one of ordinary skill in the art at the time of the invention to use any type of emitter (e.g. laser) that provide a process by which the passage of an electric current through a conductor releases heat.

Re claim 11, Prince teaches a device comprising a tactile interface characterized in that the control means of the modification elements of the tactile sensation comprising as many laser emitters as modification elements of the tactile sensation with the radiation from a laser being put in bijective correspondence with a modification element of the tactile sensation (see figures 2, 9 and 10, column 12 lines 17-35).

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Furthermore, since Prince teaches the thin film shape memory material heated by joule heating, it would have been obvious to one of ordinary skill in the art at the time of the invention to use any type of electric heating device (e.g. laser emitter) that provide a process by which the passage of an electric current through a conductor releases heat.

Re claim 12, Prince teaches a tactile interface in that the control means of the modification elements of the tactile sensation comprise a laser emitter controlling a plurality of modification elements of the tactile sensation and means for mobilizing the radiation with one or two degrees of freedom (see figures 2, 9 and 10, column 12 lines 17-35). Furthermore, since Prince teaches the thin film shape memory material heated by joule heating, it would have been obvious to one of ordinary skill in the art at the time of the invention to use any type of electric heating device (e.g. laser emitter) that provide a process by which the passage of an electric current through a conductor releases heat.

Re claim 14, Prince teaches a tactile interface characterized in that it comprising a translation plate the laser emitter being shifted by this plate (see figures 2-3, column 5 lines 7-32).

Re claim 16, Prince teaches a tactile interface characterized in that it comprising a reflector controlled in rotation, this reflector receiving the radiation originating from a laser emitter (see figure 4, column 7 lines 42-48 and column 8 lines 1-32). Furthermore, since Prince teaches the thin film shape memory material heated by joule heating, it would have been obvious to one of ordinary skill in the art at the time of the invention to

use any type of electric heating device (e.g. laser emitter) that provide a process by which the passage of an electric current through a conductor releases heat.

5. Claims 13, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Prince 6743021 in view of Martin 5574576.

Re claim 13, Prince teaches the invention as discussed above.

However, Prince fails to teach the following limitation as taught by Martin: a fiber optic having an inlet end receiving the radiation output by the laser emitter and an outlet end for the laser radiation, with the radiation used to produce transformation of one or more modification elements of the tactile sensation originating from said outlet of the fiber optic (column 6 lines 26-49).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Prince's invention in view of Martin in order to provide a tactile display device where upon contact with amplified laser light, individual elements are moved to form a pattern representing an observed visual image as taught by Martin (column 3 lines 47-50).

Re claim 15, Prince i.v., Martin teaches the invention as discussed above. In addition, Prince teaches a tactile interface characterized in that it comprising a translation plate, the outlet end of the fiber optic being shifted by this plate (see figures 4 and 7, column 10 lines 28-51).

Re claim 17, Prince i.v., Martin teaches the invention as discussed above. In addition, Prince teaches a tactile interface characterized in that it comprising a reflector



controlled in rotation, this reflector receiving the radiation originating from a laser emitter via the fiber optic (see figure 4, column 7 lines 42-48 and column 8 lines 1-32).

Furthermore, since Prince teaches the thin film shape memory material heated by joule heating, it would have been obvious to one of ordinary skill in the art at the time of the invention to use any type of electric heating device (e.g. laser emitter) that provide a process by which the passage of an electric current through a conductor releases heat. Moreover, since Prince teaches the thin film shape memory material connected by lines and cables from an electric power source controlled by the microcontroller, it would have been obvious to one of ordinary skill in the art at the time of the invention to used any type of cable lines (e.g. metallic wires, fiber optics) as a medium for transmission of signals.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure as per the attached Notice of References Cited.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALVIN L. CARLOS whose telephone number is (571)270-3077. The examiner can normally be reached on 7:30am-5:00pm EST Mon-Fri (alternate Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xuan Thai can be reached on (571)272-7147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alvin L Carlos/  
Examiner, Art Unit 3714  
August 12, 2008

/XUAN M. THAI/  
Supervisory Patent Examiner, Art Unit 3714